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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/596,216	06/05/2006	Walter Ritten	DE030415	3655

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EXAMINER

GAWORECKI, MARK R

ART UNIT	PAPER NUMBER
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2884

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/596,216

Applicant(s)

RUTTEN ET AL.

Examiner

Mark R. Gaworecki

Art Unit

2884

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, 6, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Spivey *et al.* (5,886,353).

With respect to claim 1, Spivey shows a detector for an imaging device (Fig. 1) comprising a substrate (7), an array of sensor elements formed on one side of the substrate (12), and an integrated electronic module mounted at one edge of the substrate and being connected at its input side to the sensor elements (20), wherein the module comprises at least one analog-to-digital converter (column 9, lines 28-35).

With respect to claims 2 and 4, Spivey shows amplifiers (50) for amplifying the input signals of the integrated module (Fig. 16).

With respect to claims 3 and 4, Spivey shows the use of multiplexers upstream of the analog-to-digital circuits (column 13, lines 45-61).

With respect to claim 6, Spivey shows the sensor elements extend at three sides right up to the edge of the substrate (Fig. 15A).

With respect to claim 8, Spivey shows the use of a crystalline silicon substrate (column 1, lines 52-55).

3. Claims 1-4, 9, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Kyyhkynen (6,403,964).

With respect to claims 1-4, Kyyhkynen shows a detector for an imaging device comprising a substrate (support, 82), an array of sensor elements (90), and an integrated electronic module comprising an analog-to-digital converter, a multiplexer, and amplifier (section 104, column 9, lines 28-37).

With respect to claims 9 and 10, the imaging module of Kyyhkynen is used for an X-ray imaging device (column 1, lines 11-15).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kyyhkynen (6,403,964).

With respect to claim 7, Kyyhkynen does not explicitly disclose a method for mounting the processing chips onto the substrate. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use flip-chip contacting, wire-bonding or mounting

of packaged ICs on a wafer, as these are flexible and cost-effective methods for semiconductor assemblies.

6. Claims 5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kyyhkynen (6,403,964), in view of Spivey *et al.* (5,886,353).

With respect to claims 5 and 8, Kyyhkynen does not disclose the specific semiconductor material of the substrate for the imaging module (Figs. 5a-5c). Spivey teaches that crystalline silicon is a well-established material for use as a semiconductor substrate (column 1, line 52-column 2, line 4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the substrate, including the processing module (104) of Kyyhkynen, out of crystalline silicon, as crystalline silicon is a common material for semiconductor substrates.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Pat. No. 6,208,708 to Hoheisel *et al.*

U.S. Pat. No. 5,099,128 to Stettner

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark R. Gaworecki whose telephone number is (571) 272-8540. The examiner can normally be reached on Monday through Thursday, 7:00-5:30.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MG
15 March 2007



DAVID PORTA
SUPERVISOR, PATENT EXAMINER
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